UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,570	09/19/2003	Kumar Ganapathy	42P14031D2D	8599

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EXAMINER
KIM, KENNETH S

ART UNIT	PAPER NUMBER
2111	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	10/666,570	GANAPATHY ET AL.
	Examiner	Art Unit	
	Kenneth S. KIM	2111	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>05 April 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>14-18,21 and 30-37</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>14-18,21 and 30-37</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

KENNETH S. KIM
PRIMARY EXAMINER

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>April 5, 2005</u>.

4)☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

1.   Claims 14-18, 21, and 30-37 remain for examination.

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3.   Claims 14-18, 21, and 30-37 are rejected under 35 U.S.C. 101 because the claimed invention does not fall under the umbrella of useful (with physical results) process (that changes physical states of physical matter), machine (physical structure comprising operationally functional components), manufacture (physical matter produced by physical process), or composition of (physical) matter, and the claimed invention is directed to non-statutory subject matter. (physical = non-abstract)

"An instruction set architecture comprising a set of instructions" does not fall under the umbrella and falls under the non-statutory subject matter. See MPEP 2106 (IV)(B)(1)(a).

The rejection is respectfully maintained.

[4.   The following double patenting rejection has been *disapproved* by a Technology Center Director (based on the principle outlined in MPEP 804.04) and hence *not enforceable*, however, examiner believes the rejection is appropriate based on the substance of the claimed invention and the applicability of the principle diminished by the circumstances in the prosecution.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA

1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5.   Claims 14-18, 21, and 30-37 are rejected under the judicially created doctrine of double patenting over claims 5-10 of U. S. Patent No. 6,772,319 since the claims, if allowed, would improperly extend the "right to exclude" already granted in the patent.

The subject matter claimed in the instant application is fully disclosed in the patent and is covered by the patent since the patent and the application are claiming common subject matter, as follows:

Claims 5-10 of U.S. Patent No. 6,772,319 contain every element of claims 14-18, 21, 30-37 of the instant application and as such anticipate claims 14-18, 21, and 30-37 of the instant application.

"A later patent claim is not patentably distinct from an earlier patent claim if the later claim is obvious over, or **anticipated by**, the earlier claim. In re Longi, 759 F.2d at 896, 225 USPQ at 651 (affirming a holding of obviousness-type double patenting because the claims at issue were obvious over claims in four prior art patents); In re Berg, 140 F.3d at 1437, 46 USPQ2d at 1233 (Fed. Cir. 1998) (affirming a holding of obviousness-type double patenting where a patent application claim to a genus is anticipated by a patent claim to a species within that genus). " ELI LILLY AND COMPANY v BARR LABORATORIES, INC., United States Court of Appeals for the Federal Circuit, ON PETITION FOR REHEARING EN BANC (DECIDED: May 30, 2001). *]*

6.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7.   Claims 14-18, 21, and 30-37 are rejected under 35 U.S.C. 112, second

paragraph, as being indefinite for failing to particularly point out and distinctly claim the

subject matter which applicant regards as the invention.

(a)   Claims 14, 16, and 33, it is not clear how the voice and data samples are

converted to packets. The body of the claims do not recite limitations as to how the

conversion is carried out to support the phrase following "to convert".

(b)   Claims 15, 31, 34, and 36, it is not clear what is the relevance of the mode bits

with respect to the limitations in the base claim.

8.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9.   Claims 14-18, 21, and 30-37 are rejected under 35 U.S.C. 102(b) as being

anticipated by Read et al, U.S. Patent No. 5,420,809.

Read et al teaches the invention as claimed in claim 14 including an instruction

set architecture (ISA) for execution of operations within a digital signal processor (71-

74) to convert voice and data samples into packets for transmission over a network and

to convert packets received from the network into voice and data samples (for any application), the instruction set architecture comprising:

(a) a set of instructions for operation within a digital signal processor wherein each instruction includes a first operand accessed directly from memory, a second operand accessed directly from memory of a local register, and a destination register to store results (source and destination operands are located in registers or memory), the set of instructions including,

(b) a 20-b1t DSP instruction (can be any length),

(c) a 40-bit DSP instruction (can be any double length),

(d) the set of instructions to accelerate calculations within the digital signal processor of the type where D = ((A operation one B) operation two C) where operation one and operation two are separate signal processing operations (col. 62), and

further teaches as in claims 15, 21, and 30

(e) the twenty bit instruction uses mode bits in control registers (figs. 6 and 9) and the forty bit instruction has a control extension to override the mode bits (fig. 43; instruction extension with override prefixes for x86 instructions as in Tran submitted by the applicant) – claims 15 and 21,

(f) the digital signal processing operations are of the set of operations of multiplication, addition, extremum, and no operation (various types of operations) – claim 30.

The ISA claims 16-18, 31, and 32 and the ISA claims 33-37 are equivalently rejected based on the same reason.

10.   Claims 14-18, 21, and 30-37 are rejected under 35 U.S.C. 102(b) as being

anticipated by Garcia et al, U.S. Patent No. 5,530,663, submitted by the applicant.

Garcia et al teaches the invention as claimed in claim 14 including an instruction

set architecture (ISA) for execution of operations within a digital signal processor (any

type of processor) to convert voice and data samples into packets for transmission over

a network and to convert packets received from the network into voice and data

samples (for any application), the instruction set architecture comprising:

(a) a set of instructions for operation within a digital signal processor wherein each

instruction includes a first operand accessed directly from memory, a second operand

accessed directly from memory of a local register, and a destination register to store

results (source and destination operands are located in registers or memory), the set of

instructions including,

(b) a 20-b1t DSP instruction (can be any length),

(c) a 40-bit DSP instruction (can be any double length),

(d) the set of instructions to accelerate calculations within the digital signal processor of

the type where D = ((A operation one B) operation two C) where operation one and

operation two are separate signal processing operations (col. 2, line 39), and

        further teaches as in claims 15, 21, and 30

(e) the twenty bit instruction uses mode bits in control registers and the forty bit

instruction has a control extension to override the mode bits (instruction extension with

override prefixes for x86 instructions as in Tran submitted by the applicant) – claims 15

and 21,

(f) the digital signal processing operations are of the set of operations of multiplication,

addition, extremum, and no operation (various types of operations) – claim 30.

The ISA claims 16-18, 31, and 32 and the ISA claims 33-37 are equivalently

rejected based on the same reason.11.

11.   Applicant's arguments filed April 5, 2005 have been fully considered but they are

not persuasive.

(a)   Applicant argued that the amended claims include "to convert voice and data

samples into packets for transmission over a network and to convert packets received

from the network into voice and data samples", indicating the production of a "useful,

concrete, and tangible result" in a practical application, and argued thus that the claimed

invention meets the 35 U.S.C. 101 requirement.

Examiner notes, however, the body of the claims do not recite any limitation that

performs the conversion to produce a tangible result (sample and packets).

(b)   Applicant also argued that claims 14-18, 21, and 30-37 were previously found

patentably distinct in a restriction requirement issued in the parent case (10/215, 721,

and hence requested reconsideration of the judicial double patenting rejection.

Examiner notes the following:

(for Application Serial No. 09/494,608 – issued U.S. Patent No. 6,446,195)
.   Application filed January 31, 2000, with claims 1-20,
        Restriction requirement held March 6, 2001 in 4 groups (see attached),
                (i) Claims 1-8, for multiplier/adder,
                (ii) Claims 9-13, input multiplexer,
                (iii) Claims 14-18, D= (A op1 B) op2 C instruction processing,
                (iv) Claims 19 and 20, parallel/ serial execution of main/sub operations.
        Amendment filed April 12, 2001, with Claims 1-8 and 21-35,

            Claims 9-20 canceled,
            New Claims 21-35 added.
    Non-final office action mailed April 23, 2001,
            Claims 1-8 and 22-35 rejected.
    Amendment filed January 10, 2002, with Claims 1-8 and 21-46,
            Claims 7, 8, 21, and 35 amended,
            New Claims 36-46 added.
    Supplemental Amendment filed February 26, 2002, with Claims 1-8 and 21-47,
            Claims 21, 26, 31, and 42 amended,
            New Claim 47 added.
    Allowed on April 2, 2002 Claims 1-8 and 21-47

(for Application Serial No. 10/215,721 – issued U. S. Patent No. 6,772,319)
    Divisional Application filed August 8, 2002, with Claims 14-18 and 21-37.
    Restriction requirement held February 11, 2003 in 2 groups (see attached),
            (i) Claims 14-18 and 21, for ISA including (A op1 B) op2 C instruction,
            (ii) Claims 22-37, for ISA (instr set architect) including control instructions..
    Amendment filed March 10, 2003, with Claims 22-43,
            Claims 14-18 and 21 canceled,
            New Claims 38-43 added.
    Non-final office action mailed April 16, 2003,
            Claims 22-43 rejected.
    Amendment filed June 10, 2003, with Claims 22-44,
            Claims 22, 27, 29, 31, 32, 36, and 38 amended,
            New Claim 44 added,
    Restriction requirement held July 16, 2003 in 2 groups (see attached),
            (i) Claims 22-30 and 38-43, for ISA with 20-bit / 40-bit control instructions
            (ii) Claims 31-37 and 44, for ISA with RISC inst to control over DSP units.
    Amendment filed August 15, 2003, with Claims 22-30 and 38-43,
            Claims 31-37 and 44 are canceled.
    Non-final office action mailed October 1, 2003,
            Claims 22 and 24-26 rejected,
            Claim 23 objected, and
            Claims 27-30 and 38-43 allowed.
    Amendment filed February 3, 2004, with Claims 22-30, 38-43, and 45-49,
            Claims 22-26 amended,
            New Claims 45-49 added.
    Restriction requirement held February 9, 2004 in 2 groups (see attached),
            (i) Claims 22-26 and 45-49, for ISA with RISC instr to control DSP units,
            (ii) Claims 27-30 and 38-43, for with instr to control dyadic DSP instr.
    Amendment filed March 2, 2004, with Claims 27-30 and 38-43,
            Claims 22-26 and 45-49 canceled.
    Allowed Claims 27-30 (renumbered 1-4) and 38-43 (renumbered 5-10).

(for the present Application Serial No. 10/666,570 – now pending)
   Divisional Application filed September 19, 2003, with Claims 14-18 and 21-29,
   Restriction requirement held October 26, 2004 in 2 groups (see attached),
      (i) Claims 14-18 and 21, for ISA with D=(A op1 B) op2 C in 20/40 bit instr.
      (ii) Claims 22-29, for RISC unit instr to control DSP instructions.
   Amendment filed November 23, 2004, with Claims 14-18, 21, and 30-32,
      Claims 15 and 16 are amended,
      Claims 22-29 are canceled,
      New Claims 30-32 are added.
   Non-final office action mailed January 5, 2005,
      Claims 14-18, 21, and 30-32 rejected.
   Amendment filed April 5, 2005, with Claims 14-18, 21, and 30-37,
      Claims 14 and 16 amended,
      Claims 33-37 added.

   Examiner notes that, in the restriction requirement made on February 11, 2003, two groups were identified. The second group, Claims 22-37 were about control instructions based on the independent claims 22 and 31, Dependent claim 27 recited main operation and sub-operation combination instruction limitation that is later considered to be equivalent to the D=(A op1 B) op2 C instructions of the first group. Independent claim 38 was added reciting both the control instruction and D+(A op1 B) op2 C instructions.
   The dependent Claim 27 was made independent including both the control and main operation and sub-operation combination instructions, The independent Claim 22 solely reciting the control instruction was rejected, amended, and eventually withdrawn.
   Applicant did not pursue in the parent case the group of claims strictly based on the control instruction. The allowed Claims 27 and 38 (Claims 1 and 5 in the published patent) do not represent the second group as originally identified under the restriction requirement of February 11, 2003.
   Applicant's argument that the allowed claims were representative of the second group and hence any claim belonging to the first group cannot be rejected based on judicial double patenting is deemed not persuasive.

12.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

   Peleg et al taught the use of registers and memory locations for operand storage

(cols. 5 and 6).

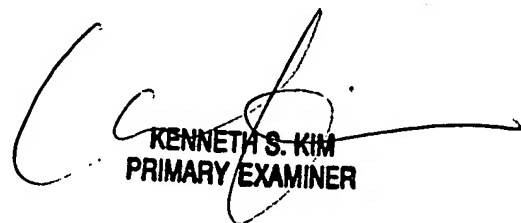Application/Control Number: 10/666,570   Page 10
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13.   Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Kenneth S KIM whose telephone number is (571) 272-
3627. The examiner can normally be reached on M-F (8:30-17:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Mark Rinehart can be reached on (571) 272-3632. The fax phone numbers
for the organization where this application or proceeding is assigned are (703) 872-9306
for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or
proceeding should be directed to the receptionist whose telephone number is (571) 272-
2100.

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June 23, 2005

KENNETH S. KIM
PRIMARY EXAMINER